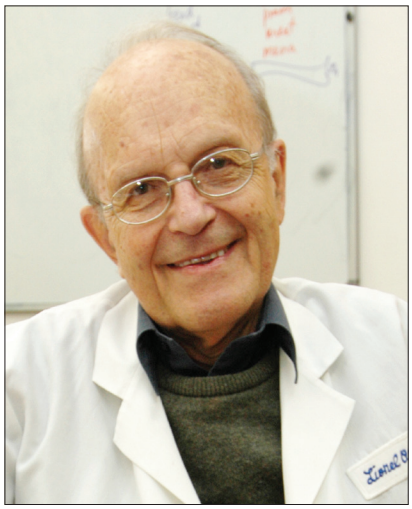
# OBITUARY

## Lionel Henry Opie, 6 May 1933 - 20 February 2020



Lionel Henry Opie was born in 1933 in the small town of Hanover in the Karoo, Northern Cape, South Africa (SA), and was the only son of Dr William Henry Opie and Mrs Marie Opie. Inspired by his father's example to study medicine, Lionel graduated in medicine from the University of Cape Town (UCT) in 1955 with first-class honours and the final-year gold medal. After his internship at Groote Schuur Hospital, Cape Town, he successfully applied for the Rhodes Scholarship and read for a DPhil at the University of Oxford from 1957, graduating in 1959 with a dissertation titled *The Physiology of Artificial Respiration*. Immediately after leaving Oxford, he spent 2 years at Harvard Medical School as the Samuel Levine Fellow in Cardiology, performing research on myocardial metabolism. In 1961, he graduated with an MD from UCT; his thesis was titled *Myocardial Intermediary Metabolism*.

Lionel worked as a resident in medicine at Toronto General Hospital from 1961 to 1962. After he returned to SA, he was a consultant in medicine at Karl Bremer Hospital, Bellville, where he oversaw the diabetic service.

Lionel left for London to undertake further basic science research under the supervision of Nobel prize winners, Prof. Sir Hans Krebs (of Krebs cycle fame) and Prof. Sir Ernst Chain (who had shared the Nobel prize with Fleming and Florey for the discovery of penicillin).

Following a stint in the laboratory, Lionel was appointed as a senior registrar in cardiology at Hammersmith Hospital, London, between 1967 and 1969. On completion of his training, he was appointed as a consultant in medicine at the Royal Postgraduate Medical School and Hammersmith Hospital, London, in 1969. From 1970 to 1986, he was cofounder and co-editor of the *Journal of Cellular and Molecular Cardiology,* with Richard Bing (later, he would establish two other new journals with the help of his wife, Carol).

Lionel returned to Cape Town in 1971 and established his laboratory, working on basic research in ischaemic heart disease and cardioprotection, and establishing the Ischaemic Heart Disease Unit in the Department of Medicine, UCT. His initial research funding was made possible through the generous donation by Christiaan Barnard from the proceeds of his best-selling book, *One Life*. In 1976, the SA Medical Research Council awarded Lionel a research unit, which they funded for 22 years – until 1998. At the same time, he was appointed as a cardiologist in the Department of Medicine at Groote Schuur Hospital, where he worked closely with other colleagues in the Cardiac Clinic. In 1974, he received an extraordinary appointment as *Professeur Invité* in cardiology at the University of Geneva. In 1978, he was a visiting professor in cardiology at the University of Pisa.

From 1979 to 1999, Lionel was Director of the Hypertension Clinic at Groote Schuur Hospital. In 1980, he was promoted to Full Professor and had a Chair in medicine established at UCT. Between 1980 and 1982, he served as president of the SA Cardiac Society (now SA Heart), and from 1984 to 1986 as president of the Southern African Hypertension Society. From 1980 to 1986, he was the founding chairman of the Council on Cardiac Metabolism of the International Society and Federation of Cardiology. The 1980s were arguably Lionel's busiest decade, including many visiting and honorary professorships to many universities around the world, including Oxford, Stanford and Bologna. In 1988, he gave a distinguished lecture series at the Mayo Clinic in Rochester, Minnesota.

As a scientist, Lionel made several key contributions: he (*i*) devised the key metabolic derangements of carbohydrate and fatty acid metabolism of the ischaemic heart; (*ii*) demonstrated how acute myocardial infarction induces acute adrenergic stimulation, which increases circulating free fatty acids, further damaging the heart and inhibiting glucose uptake; and (*iii*) demonstrated the role of beta-blockers in treating acute coronary syndromes. These concepts had significant clinical implications – the treatment of acute coronary syndromes with beta-blockers, which is now routine therapy worldwide and has saved millions of lives. His glucose hypothesis has stood the test of time, and his discovery of the role of excess cyclic adenosine monophosphate (cAMP) in fatal myocardial infarction made UCT famous. His scholarship on myocardial reperfusion proved that insulin can directly protect the myocardium from ischaemia-reperfusion injury and established the concept of preconditioning as a powerful form of cardiac protection. At the time of his retirement, Lionel had published just under 600 articles in peer-reviewed scientific journals, 31 books on heart disease (including *Drugs for the Heart* – now in its 9th edition – and *Heart Physiology* – now in its 4th edition) and 141 book chapters. The National Research Foundation (NRF) supported him for 10 years and awarded him an A1 research rating in 2008. In 2003, Lionel entered a research partnership with Prof. Derek Yellon of the Hatter Institute at University College London and established the Hatter Institute at UCT. Together, they had a prolific research collaboration and established the Cardiology, Diabetes and Nephrology At the Limits conferences, with *The Lancet* as partner.

During his illustrious career, he won many prestigious prizes and awards, which included a 1st prize at the essay contest of the American College of Chest Physicians in 1954, the SA Diabetic Association prize in 1979, the Lorenzini gold medal from the International Society for Heart Research in 1982, the John F W Herschel medal for cardiovascular research from the Royal Society of SA in 1986, the UCT book award for *The Heart: Physiology, Metabolism, Pharmacology and Therapy* in 1987, and the Percy Fox Annual

Foundation award in 1988 for 'outstanding research concerned with the function of the heart in health and disease'. He also won the Wellcome gold medal for research of specific importance to SA in 1990, a SA Medical Research Council Silver Medal for research in 1990, the Albrecht Fleckenstein award for basic research in cardiology from the International Society for Heart Failure in 1995, the President's Medal from the SA Cardiac Society in 1996 and a silver medal of the International Society for Heart Research in 2002 for 'scientific achievements and in gratitude for services to the Society'. His book, *Living Longer, Living Better*, was the winner of the UK medical journalists' 2011 award for the best book in the self-help category.

Lionel will be remembered by many as the doyen of cardiovascular medicine and research in Africa and a global leader in the field of cardioprotection. While he received many citations and accolades, he would acknowledge that his receipt of the National Order of Mapungubwe in Silver in 2005, the highest national award in SA, from President Thabo Mbeki, was arguably the most important recognition of his many and sustained contributions to science and clinical medicine. He received an NRF Lifetime Achievement Award in 2014.

He received honorary doctorates from the universities of Stellenbosch and Copenhagen and election to fellowship of many prestigious medical societies in SA and globally. Some of these include fellowships of the Royal College of Physicians (London), American College of Cardiology, American Heart Association, Royal Society of SA, International Society of Heart Research and Physiology Society of Southern Africa, and honorary fellowships of the European Society of Cardiology and College of Physicians of SA.

Lionel was highly respected by his students, colleagues and peers for his clarity of thought, work ethic, integrity and passion for asking important scientific questions. While I did not personally work with him, his enduring stature and presence were a source of inspiration in my career and in the careers of countless others.

He is survived by wife, Carol, daughters, Jessica and Amelia, and grandchildren, Liam and Eva.

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